WHAT IS CLAIMED IS:

1. An observation method by a bio electron microscope, wherein in an electron microscope having an electron illumination system converging or collimating an accelerated electron beam to irradiate it onto a specimen and an imaging system detecting an electron transmitting the specimen or a secondary electron and a reflected electron emitted from the surface of the specimen to obtain a magnified image, said specimen is observed at a critical electron accelerating voltage possible to transmit a specimen of the electron beam or at an accelerating voltage 1.2 to 4.2 times the critical electron accelerating voltage possible to transmit a specimen obtained under predetermined conditions.

2. The observation method by a bio electron microscope according to claim 1, wherein said critical electron accelerating voltage possible to transmit a specimen is determined by a step of photographing an observation area or an approaching area of said specimen at a low accelerating voltage below 30kV and a plurality of kinds of accelerating voltages, a step of comparing image qualities such as a resolution and contrast of the images, and a step of deciding the critical electron accelerating voltage possible to transmit a specimen.

3. The bio electron microscope according to claim 1, wherein to set an accelerating voltage of an electron beam irradiated onto said specimen to a desired value, at least one of an emission current of an electron gun, an exciting current of electron lenses in illumination and

imaging system and an electron beam apertures position which are optimum to the accelerating voltage is held as a recipe in a controlling computer.

4. The bio electron microscope according to claim 1, wherein in an image analysis part and an image display part, similarity between an observed image of virus or protein included in said specimen and a reference image of known virus or protein is subjected to quantitative analysis using image processing software, and the species of virus or protein or the species of a substance in said specimen is identified to display the result.

5. The bio electron microscope according to claim 1, wherein chip-like specimen preparation equipment using an MEMS (Micro Electro Mechanical Systems) technique is mounted on a specimen stage part.

6. An observation method by a bio electron microscope, wherein in an electron microscope having an electron illumination system converging or collimating an accelerated electron beam to irradiate it onto a specimen and an imaging system detecting an electron transmitting the specimen or a secondary electron and a reflected electron emitted from the surface of the specimen to obtain a magnified image, said specimen is observed at a critical electron accelerating voltage possible to transmit a specimen or at an accelerating voltage for a stained section specimen 1.2 to 4.2 times the critical electron accelerating voltage possible to transmit a

specimen obtained under predetermined conditions, an accelerating voltage for a negative stained specimen 1.6 to 3.5 times the same, and an accelerating voltage for a frozen section specimen 2.0 to 3.0 times the same.

7. The observation method by a bio electron microscope according to claim 6, wherein said critical electron accelerating voltage possible to transmit a specimen is determined by a step of photographing an observation area or an approaching area of said specimen at a low accelerating voltage below 30kV and a plurality of kinds of accelerating voltages, a step of comparing image qualities such as a resolution and contrast of the images, and a step of deciding the critical electron accelerating voltage possible to transmit a specimen.

8. The bio electron microscope according to claim 6, wherein to set an accelerating voltage of an electron beam irradiated onto said specimen to a desired value, at least one of an emission current of an electron gun, an exciting current of electron lenses in illumination and imaging system and an electron beam apertures position which are optimum to the accelerating voltage is held as a recipe in a controlling computer.

9. The bio electron microscope according to claim 6, wherein in an image analysis part and an image display part, similarity between an observed image of virus or protein included in said specimen and a

reference image of known virus or protein is subjected to quantitative analysis using image processing software, and the species of virus or protein or the species of a substance in said specimen is identified to display the result.

10. The bio electron microscope according to claim 6, wherein chip-like specimen preparation equipment using an MEMS (Micro Electro Mechanical Systems) technique is mounted on a specimen stage part.

11. A bio electron microscope, wherein in an electron microscope having an electron illumination system converging or collimating an accelerated electron beam to irradiate it onto a specimen and an imaging system detecting an electron transmitting the specimen or a secondary electron and a reflected electron emitted from the surface of the specimen to obtain a magnified image, an electron energy filter is provided between an electron detector detecting an electron beam transmitting a specimen and the specimen.

12. The bio electron microscope according to claim 11, wherein to set an accelerating voltage of an electron beam irradiated onto said specimen to a desired value, at least one of an emission current of an electron gun, an exciting current of electron lenses in illumination and imaging system and an electron beam apertures position which are optimum to the accelerating voltage is held as a recipe in a controlling computer.

13. The bio electron microscope according to claim 11, wherein in an image analysis part and an image display part, similarity between an observed image of virus or protein included in said specimen and a reference image of known virus or protein is subjected to quantitative analysis using image processing software, and the species of virus or protein or the species of a substance in said specimen is identified to display the result.

14. The bio electron microscope according to claim 11, wherein chip-like specimen preparation equipment using an MEMS (Micro Electro Mechanical Systems) technique is mounted on a specimen stage part.